United States
Environmental Protection
Agency

Region 5
Office of Public Affairs
230 South Dearborn Street
Chicago, Illinois 60604

Illinois Indiana,
Michigan, Minnesota,
Ohio, Wisconsin

EPA

FACT SHEET

SKINNER LANDFILL
PHASE II REMEDIAL INVESTIGATION
JUNE 1991

INTRODUCTION

The United States Environmental Protection Agency (U.S. EPA), in conjunction with Ohio EPA, has completed the second part (referred to as Phase II) of a two-phase Remedial Investigation (RI) at the Skinner Landfill site in West Chester, Ohio. The RI involves collecting and analyzing data necessary to define the nature and extent of the contamination problem at the site. This fact sheet will provide background information on the Skinner Landfill site, and will summarize the Phase I and II RI findings.

The U.S. EPA and Ohio EPA will hold an informational public meeting to discuss the findings of the RI and future activities at the site. The public will also have an opportunity to ask questions.

WHEN: Thursday, June 20 ,1991
WHERE: Freedom Elementary School Cafeteria
6035 Beckett Ridge Blvd.
West Chester, Ohio
TIME: 7 p.m.

THE SITE LOCATION AND BACKGROUND

The Skinner Landfill site occupies seventy-eight acres of land within the town of West Chester, Union Township, Butler County, Ohio. Only ten acres of the site is considered a landfill. The site consists of wooded, hilly terrain bordered on the South by the East Fork of Mill Creek, on the east by the Conrail railroad tracks and on the west by the Cincinnati-Dayton Road. Development including single family homes, a school, churches and businesses are located primarily along Cincinnati-Dayton Road and east of the Conrail railroad tracks.

The Skinner Landfill property has been owned by the Skinner family since the 1930's. During this time, portions of the property have been used for disposal of municipal and industrial wastes. From 1963 to 1976, the Butler County Health Department, and the Southwestern Ohio Air Pollution Control Agency received periodic complaints from nearby residents of heavy smoke and odors coming from the site.

ON April 18, 1976, a fire at the site sparked immediate attention from local and state officials. The Ohio EPA conducted investigations at the site and found that industrial and chemical wastes had been disposed of at the site. As a result of those investigations, the site was listed on the U.S. EPA Superfund National Priorities List (NPL) in December 1982.

SITE DESCRIPTION

The actual landfill covers about 10 acres and is located in the northeast quadrant of the site. Three ponds are located on site; two near the western boundary of the site along Skinner Creek. Another pond is located immediately north of the landfill area.

Located in between the main access road and the two western ponds is the metal storage area. The metal storage area contains primarily scrap metals such as aluminum, chrome, stainless steel and empty 55-gallon steel drums.

Other areas of concern include the East Fork of Mill Creek, Skinner Creek, Dump Creek and possibly the Buried Pit Area.

Of primary concern is the waste lagoon discovered by Ohio EPA in 1976, which covers approximately three-quarters of an acre and is buried beneath 40 feet of demolition material.

REMEDIAL INVESTIGATION

The U.S. EPA and Ohio EPA separated the RI into two phases. During Phase I of the RI, U.S. EPA and Ohio EPA found no significant contamination migrating off site that would immediately affect nearby residents or the environment (for additional information on the Phase I RI results, see the Available Information Section on the last page of this fact sheet).

The primary purpose of the Phase II RI was to acquire additional data to more fully characterize the nature and extent of contamination, the migration or potential migration pathways of contaminants, and the hydrogeology of the site sufficiently to select an appropriate cleanup method during the Feasibility Study (FS). This new information was also used to evaluate the potential risk to the environment and public health during risk assessment activities.

Phase II of the Skinner site Remedial Investigation scope of work included:

* Geologic investigation and evaluation.
* Hydrogeologic investigation and evaluation.
* Ground water sampling and analysis.
* Surface water and sediment sampling and analysis in creeks and ponds.
* Soil sampling and analysis.
* Definition, sampling and characterization of the buried waste lagoon.
* Definition, sampling and characterization of the buried pit.

The following are brief summaries of the results of the Phase II investigation.

HYDROGEOLOGICAL INVESTIGATION

Ground water flow within unconsolidated sediments usually occurs along the more permeable deposits of the buried bedrock valleys. Buried bedrock valleys roughly parallel the East Fork of Mill Creek, Skinner Creek, and the main access road to the landfill. There are two ground water flow divides at the site. The first is at metal storage area, and the second is at the waste lagoon. Ground water flow near the waste lagoon is toward the buried bedrock valleys and the East Fork of Mill Creek.

Bedrock is not likely to be a significant pathway for contaminant migration. This is because the less permeable sediments overlying the bedrock, combined with the low permeability of the bedrock inhibits ground water flow.

SOURCES OF CONTAMINATION

Soils

The buried waste lagoon is both the largest and the most significant source of contamination at the Skinner site. Additional contamination may be from drums located north of the buried waste lagoon which were sampled in 1976 and 1986. The buried waste lagoon contains debris including wood, plastic, metal, brick, wire, glass, paper and rubber. Chemicals of concern include volatile organic compounds, semi-volatile organic compounds, pesticides, metals, low levels of Polychlorinated Biphenyls (PCBs), dioxins and furans. The waste lagoon volume is estimated to be 107,000 cubic yards. 55-gallon drums and other containers are also buried within the waste lagoon.

Landfill Contents

The remaining portions of the landfill contain smaller quantities of industrial wastes mixed with large quantities of solid waste and demolition materials. However, ground water monitoring wells located within the landfill indicate that the landfill is also a source of contamination.

Buried Pit, Ponds and Metal Storage Areas

Aerial photos of the site indicate that the buried pit, ponds and the metal storage area may have been used as disposal areas. The RI data, to date, indicates that these areas were not used for disposal of industrial waste in any significant quantities.

MIGRATION AND DESTINATION OF CONTAMINANTS

Waste Lagoon and Landfill

Leachate is created at this site when rain water or melting snow percolates through the waste lagoon and landfill. The majority of compounds in the waste lagoon are largely immobile, because they bind tightly to the clayey soils below the waste lagoon and are not dissolved by water. However, mobile VOC compounds in permeable zones beneath the clayey soils have been detected. These compounds are apparently mobile in the water table and in perched ground water zones above impermeable layers.

Ground Water

The majority of ground water contamination in the unconsolidated sediments appears to originate from within the buried waste lagoon. Additional sources may exist to the north of the one well located within the landfill. Two wells located immediately adjacent to and downgradient from the lagoon, are the most impacted. These wells contain a wide variety of contaminants with the majority being volatile organic and chlorinated semi-volatile organic compounds.

Three wells located within the landfill indicated elevated levels of primarily benzene. Ground water monitoring wells located downgradient of the waste lagoon and landfill and adjacent to the East Fork of Mill Creek show considerable fewer contaminants present and at much lower concentrations.

Surface Water, Sediment, and Leachate

There are two active leachate seeps that directly discharge into the East Fork of Mill Creek and appear to originate from the waste lagoon and landfill area. Leachate seeps at the East Fork of Mill Creek contained VOCs, such as benzene, and chloroethane. There was also one leachate seep sampled near Skinner Creek which showed no contamination.

Surface water contamination is minimal in all ponds and creeks. However, sediments in ponds and creeks contain low levels of some semi-volatile compounds, PCBs, arsenic, and pesticides. The most likely reason for the contamination is due to surface water runoff from the site.

Potential Off-Site Migration

The only evidence of contaminants potentially leaving the site through ground water migration was the detection of ethylbenzene at low levels located across the East Fork of Mill Creek from the buried lagoon.

The only off-site routes of migration are is through the East Fork of Mill Creek and Skinner Creek. The leachate seeps and ground water discharges into the East Fork of Mill Creek appear to originate from within the buried waste lagoon and clearly indicate a pathway for off-site migration of contaminants.

FUTURE SITE ACTIVITIES

Risk Assessment

Based on the results of the RI, the U.S. EPA is now preparing a Risk Assessment (RA) that will evaluate the current and potential effects of contamination on human health and the aquatic environment. The RA will evaluate the impact of continued degradation of ground water, discharge to creeks, and exposures to the waste lagoon, landfill, and sediments in creeks and ponds.

Feasibility Study

Based on the results of the RI and RA, the U.S. EPA will prepare a Feasibility Study (FS), which identifies and evaluates several alternative cleanup technologies and remedies that are designed to protect human health and the environment from any site-related contamination.

During the FS, each alternative will be evaluated based on its effectiveness in protecting public health and the environment, its technical feasibility, and its cost. From the findings of the FS, the U.S. EPA and Ohio EPA will choose a plan for addressing contamination at the Skinner Landfill site that is both environmentally sound and cost effective.

Before the U.S. EPA and Ohio EPA make a final decision, they will provide the community with a fact sheet summarizing the Proposed Plan, and will provide the community with the opportunity to comment on the plan during a public comment period. A public meeting will be held during the public comment period to explain the plan and answer questions. The public meeting will be announced in a local newspaper and through the next upcoming fact sheet.

Once a plan is chosen, the U.S. EPA will begin negotiations with those potentially responsible parties (PRPs) on the contamination at the site. Negotiations will determine whether U.S. EPA or the PRPs will conduct the design and cleanup action. If no settlement is reached with the PRPs, U.S. EPA will implement the proposed plan and begin the cleanup action itself using Superfund money.

GLOSSARY

Benzene: A petroleum by-product from the smelting of copper and lead ores used in agriculture as pesticides and herbicides. Benzene may also occur naturally in coal-bearing rocks.

Dioxins: Toxic chemical compounds which are usually generated as a by-product of chemical production processes, combustion processes, auto exhaust, and wood treating operations.

Furans: (See Dioxins above)

Ground Water: The water beneath the earth's surface that flows through soil pores and rock openings.

Inorganic Compounds: Chemical compounds that are composed of mineral materials, including salts and minerals such as iron, aluminum, mercury, and zinc.

Leachate: A liquid (usually water from rain or snow) that has percolated through wastes and has picked up components of those wastes.

National Priorities List (NPL): U.S. EPA's list of top priority hazardous waste sites that are eligible for federal money under Superfund.

Organic Compounds: Chemical compounds composed primarily of carbon, including materials such as solvents, oils, and pesticides.

Permeability: The ease with which ground water moves through earth materials. Movement is controlled by the size and shape of spaces between these materials.

Polychlorinated Biphenyls (PCBs): A group of organic compounds related by their basic chemical structure. They are do not degrade easily and tend to be retained in body tissue. They where widely used in electrical capacitors, transformers, and other products in the U.S. before 1980.

Sediment: Solid material that settles to the bottom of a stream, creek, lake, or other body of water.

Semivolatile Organic Compounds: Organic chemicals that vaporize less readily than VOCs.

Surface Water: Streams, lakes, ponds, rivers or any other body of water above the ground.

Volatile Organic Compounds (VOCs): Organic chemicals, such as toluene, vinyl chloride, TCE, benzene, that vaporize easily.

AVAILABLE INFORMATION

Individuals desiring additional information about the RI/FS process or the specific activities proposed for the Skinner Landfill site are encouraged to review the various U.S. EPA and Ohio EPA documents that have been prepared for the site. Copies of the applicable laws, the Community Relations Plan, and other-site related documents are available for review at:

Union Township Library
7900 Cox Road
West Chester, Ohio 65069

The following U.S. EPA and Ohio EPA personnel may be contacted if you have any questions:

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MAILING LIST ADDITION

If you would like to be added to the Skinner Landfill site mailing list to receive information, please fill out and mail this form to: Gina Weber, Office of Public Affairs, U.S. EPA (5PA-14), 230 South Dearborn Street, Chicago, IL 60604.

Name:_____

Address:_____

Affiliation:_____

Phone:_____